

## CLAIMS

What is claimed is:

- 1 1. A method for improving network efficiency of document transmission from a  
2 content server to a user, comprising the steps of:  
3 (a) at a condenser located between a content server and a user connected to  
4 said content server over a network:  
5 (i) receiving a user's request for a document,  
6 (ii) said requested document being referencable with respect to a base  
7 document associated with a class;  
8 (b) automatically obtaining said class;  
9 (c) automatically obtaining said base document associated with said class;  
10 (d) creating a condensed document by abbreviating redundancy in said  
11 requested document relative to said base document; and  
12 (e) transmitting said condensed document to said user to enable said user to  
13 reconstruct said requested document.
- 1 2. The method of claim 1 where said obtained class in said step (b) allows  
2 substantial optimization of an aspect of at least one of said steps (d) and (e).
- 1 3. The method of claim 2 where said optimized aspect is a size of said condensed  
2 document.
- 1 4. The method of claim 2 where said optimized aspect is the computational effort  
2 required to create said condensed document.
- 1 5. The method of claim 2 where said optimized aspect is a time of transmission of  
2 said condensed document to said user.

- 1 6. The method of claim 2 where said optimized aspect is the effort required by said  
2 user to perform said reconstruction.
- 1 7. The method of claim 1 where said step (b) of obtaining said class includes  
2 selecting said obtained class from a plurality of preexisting classes.
- 1 8. The method of claim 7 where said selecting of said class occurs in accordance  
2 with meeting a minimum acceptability threshold.
- 1 9. The method of claim 7 where said selecting of said class occurs in accordance  
2 with meeting an optimization standard.
- 1 10. The method of claim 7 where said selected class minimizes the sum of differences  
2 between said selected class and others of said preexisting classes.
- 1 11. The method of claim 1 where said step (b) of obtaining said class includes  
2 creating a new class.
- 1 12. The method of claim 1 where said obtained base document in said step (c) allows  
2 a substantial optimization of an aspect of at least one of said steps (d) and (e).
- 1 13. The method of claim 1 where said base document exhibits an enhanced suitability  
2 to be a reference for multiple future document requests by virtue of being a  
3 function of many past document requests.
- 1 14. The method of claim 1 where said created base document includes a plurality of  
2 frequently requested components from documents associated with said obtained  
3 class.
- 1 15. The method of claim 1 further comprising the step of sending said base document  
2 to said user for use in said reconstruction.

1 16. The method of claim 1 wherein said base document for use in said reconstruction  
2 is preexisting at said user.

1 17. The method of claim 1 further comprising the step of replacing said base  
2 document with a new base document.

1 18. The method of claim 1 where said base document is substantially anonymous with  
2 respect to any user.

1 19. The method of claim 1 where said base document substantially lacks content  
2 which is confidential to any particular user.

1 20. The method of claim 1 where said request includes identifiers of said user and  
2 said requested document.

1 21. The method of claim 20 where said document identifier includes a network  
2 location thereof.

1 22. The method of claim 1 where said base document has not necessarily been  
2 previously requested by said user.

1 23. A computer-readable storage medium encoded with processing instructions for  
2 implementing a method for improving network efficiency of document  
3 transmission from a content server to a user, said processing instructions for  
4 directing a computer to perform the steps of:  
5 (a) (i) receiving a user's request for a document,  
6 (ii) said requested document being referencable with respect to a base  
7 document associated with a class;  
8 (b) automatically obtaining said class;  
9 (c) automatically obtaining said base document associated with said class;

- 10 (d) creating a condensed document by abbreviating redundancy in said  
11 requested document relative to said base document; and  
12 (e) transmitting said condensed document to said user to enable said user to  
13 reconstruct said requested document.

1 24. The computer-readable storage medium of claim 23 where said obtained class in  
2 said step (b) allows substantial optimization of an aspect of at least one of said  
3 steps (d) and (e).

1 25. The computer-readable storage medium of claim 23 where said step (b) of  
2 obtaining said class includes selecting said obtained class from a plurality of  
3 preexisting classes.

1 26. The computer-readable storage medium of claim 23 where said step (b) of  
2 obtaining said class includes creating a new class.

1 27. The computer-readable storage medium of claim 23 where said obtained base  
2 document in said step (c) allows a substantial optimization of an aspect of at least  
3 one of said steps (d) and (e).

1 28. The computer-readable storage medium of claim 23 where said base document  
2 exhibits an enhanced suitability to be a reference for multiple future document  
3 requests by virtue of being a function of many past document requests.

1 29. The computer-readable storage medium of claim 23 where said created base  
2 document includes a plurality of frequently requested components from  
3 documents associated with said obtained class.

1 30. The computer-readable storage medium of claim 23 where said base document  
2 substantially lacks content which is confidential to any particular user.

- 1 31. The computer-readable storage medium of claim 23 where said base document  
2 has not necessarily been previously requested by said user.
- 1 32. A condenser located between, and configured to improve network efficiency of  
2 document transmission between, a content server and a user, comprising:  
3 (a) an input interface configured to receive a request from a user for a  
4 document,  
5 (i) said requested document being referencable with respect to a base  
6 document associated with a class;  
7 (b) a class tracking module configured to automatically obtain said class;  
8 (c) a document database configured to automatically obtain and provide said  
9 base document associated with said class;  
10 (d) a condensation engine configured to create a condensed document by  
11 abbreviating redundancy in said requested document relative to said base  
12 document; and  
13 (e) an output interface configured to transmit said condensed document to  
14 said user to enable said user to reconstruct said requested document.
- 1 33. The condenser of claim 32 deployed on the same network domain as said content  
2 server.
- 1 34. The condenser of claim 32 where said base document has not necessarily been  
2 previously requested by said user.
- 1 35. A system for efficient document transmission between a content server and a user,  
2 comprising: (a) the condenser of claim 32; and (b) at least one content server  
3 containing said requested document of claim 32.
- 1 36. A condenser for improving downstream network efficiency, said condenser  
2 comprising:  
3  
4 (1) a processor;

- 5  
6 (2) a memory connected to said processor storing a program to control the  
7 operation of said processor;  
8  
9 (3) the processor operative with said program in said memory to:  
10 (a) (i) receive a user's request for a document,  
11 (ii) said requested document being referencable with respect to  
12 a base document associated with a class;  
13 (b) automatically obtain said class;  
14 (c) automatically obtain said base document associated with said class;  
15 (d) create a condensed document by abbreviating redundancy in said  
16 requested document relative to said base document; and  
17 (e) transmit said condensed document to said user to enable said user  
18 to reconstruct said requested document.

- 1 37. A method for preparing and transmitting a document from a content server to a  
2 user, comprising the steps of:  
3 (a) receiving a request for a dynamic document to be sent to a user;  
4 (b) obtaining an updated version of the requested document;  
5 (c) searching a class database to determine whether the requested document  
6 can be a member of any of a plurality of current classes;  
7 (d) determining at least one of said classes to serve as a reference for said  
8 requested document;  
9 (e) extracting a base document associated with said reference class;  
10 (f) generating a condensed document reflecting the difference between said  
11 requested document and said class base file by performing a delta-  
12 encoding process; and  
13 (g) transmitting said condensed document to said requester.

- 1 38. The method of claim 37 where:  
2 (i) it is determined in said step (c) that the requested document cannot be a  
3 member of any current class;

- 4 (ii) creating a new class based upon the requested document; and
- 5 (iii) storing the requested document in the class database as a base document
- 6 for that class.

1 39. The method of claim 37 where said base document has not necessarily been  
2 previously requested by said user.